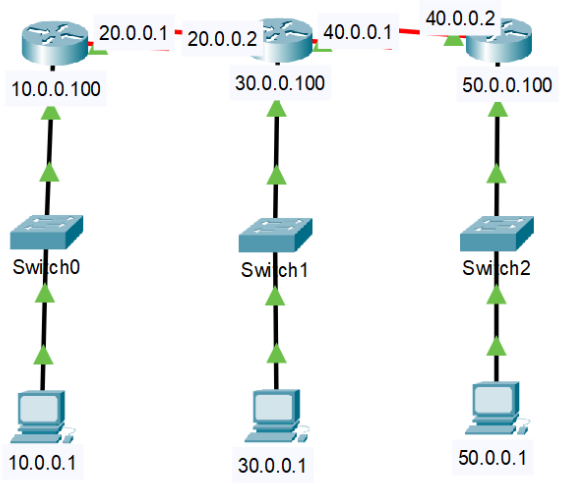
DEFAULT ROUTING

What is Default Routing?

Default routing is a method where a network administrator configures a router to send all packets destined for unknown networks (networks not found in its routing table) to a specified next-hop address or outgoing interface. This is typically used in smaller networks or at network edges, where maintaining a complete routing table is unnecessary or impractical.

Default Routing Example Network Map Guide

Network Topology & IP Setup



Device	Interface	IP Address	Subnet Mask	Default Gateway
PC1	f0/0	10.0.0.1	255.0.0.0	10.0.0.100
PC2	f0/0	30.0.0.1	255.0.0.0	30.0.0.100
PC3	f0/0	50.0.0.1	255.0.0.0	50.0.0.100
Router0	f0/0	10.0.0.100	255.0.0.0	---
Router0	s2/0	20.0.0.1	255.0.0.0	---
Router1	f0/0	30.0.0.100	255.0.0.0	---

Device	Interface	IP Address	Subnet Mask	Default Gateway
Router1	s2/0	20.0.0.2	255.0.0.0	---
Router1	s3/0	30.0.0.1	255.0.0.0	---
Router2	f0/0	50.0.0.100	255.0.0.0	---
Router2	s3/0	30.0.0.2	255.0.0.0	---

Here is a step-by-step guide to performing default routing in a multi-router network, based on your network details and incorporating practical configuration and verification steps suitable for CCNA studies and Packet Tracer lab work.

Configure Router Interfaces

Assign correct IP addresses to each interface using interface and ip address commands in CLI.

For example on Router0:

```
interface f0/0
 ip address 10.0.0.100 255.0.0.0
 no shutdown

interface s2/0
 ip address 20.0.0.1 255.0.0.0
 no shutdown
```

Repeat similar assignments on Router1 and Router2 for their interfaces.

Configure Default Routes

On each router, add static default routes:

Router0

```
ip route 0.0.0.0 0.0.0.0 20.0.0.2
```

Router1

```
ip route 0.0.0.0 0.0.0.0 20.0.0.1
ip route 0.0.0.0 0.0.0.0 40.0.0.2
```

Router2

```
ip route 0.0.0.0 0.0.0.0 40.0.0.1
```

These commands direct any traffic with unknown destinations to a next-hop IP, ensuring packets leave the site.

Test Connectivity

From each PC, use the ping command in the DOS/CLI prompt:

- PC1: ping 30.0.0.1 (tests reachability to PC2)
- PC2: ping 50.0.0.1 (tests reachability to PC3)
- PC3: ping 10.0.0.1 (tests reachability to PC1)

If each configuration is correct, each ping should succeed, confirming default routing is operational.